

INCH-POUND

MIL-PRF-1/877D
21 September 1999
SUPERSEDING
MIL-E-1/877C
9 May 1975

PERFORMANCE SPECIFICATION SHEET

ELECTRON TUBE, POWER TYPE 100TH

This specification is approved for use by all Departments and Agencies of the Department of Defense.

The requirements for acquiring the electron tube described herein shall consist of this document and the latest issue of MIL-PRF-1.

DESCRIPTION: Triode.

See figure 1.

Weight: 4-ounces (113.4 grams) nominal.

Mounting position: Vertical.

ABSOLUTE RATINGS: C Telegraphy

Parameter:	F1	Ef	Eb	Ec	Ib	Ic	Pp
Unit:	MHz	V	V dc	V dc	mA dc	mA dc	W
Maximum:	40	5.25	3,000	-210	225	50	100
Minimum:	---	4.75	---	---	---	---	---
Test conditions:	---	5.0 V ac	2,500	Adjust	40	---	---

See footnotes at end of table I.

GENERAL:

Qualification: Required.

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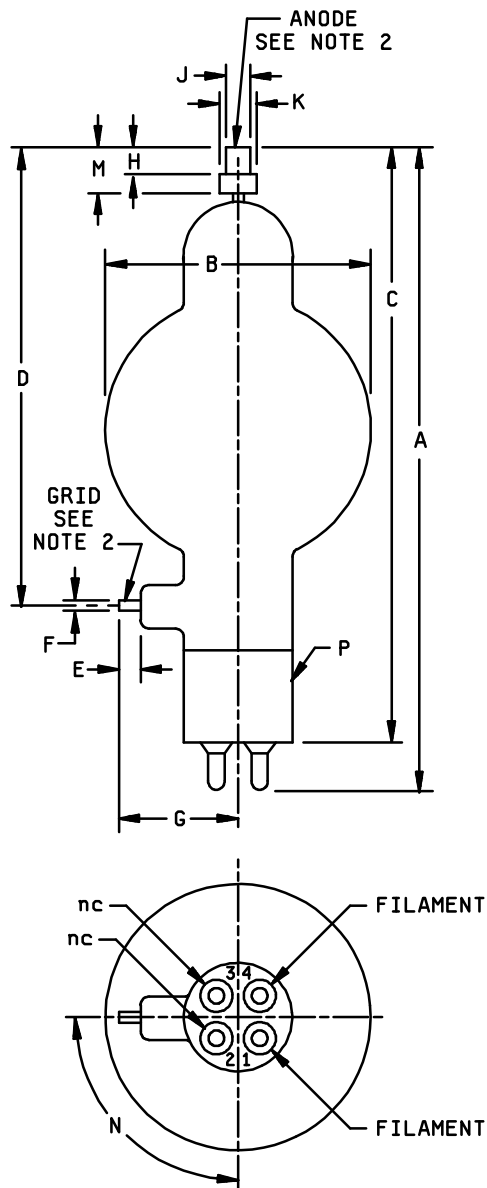
TABLE I. Testing and inspection.

Inspection	Method	Notes	Conditions	Acceptance Level 3/	Symbol	Limits		Unit
						Min	Max	
<u>Conformance inspection, part 1</u>								
Filament current	1301	---		0.65	If	5.8	6.6	A ac
Electrode voltage (1) (grid)	1261	---		0.65	Ec(1)	-34.0	-46.0	V dc
Electrode voltage (2) (grid)	1261	---	Eb = 14.0 kV dc; Ec/Ib = 1.0 mA dc	0.65	Ec(2)	---	-550	V dc
Total grid current	1266	1/		0.65	Ic	---	-10	μA dc
Primary grid emission	1266	---	Ic = 100 mA dc; t = 15 seconds; Ef = 5.5 V ac	0.65	Isg	---	-500	μA dc
Peak emission	1231	---	eb = ec = 2,500 v	0.65	is	3.0	---	a
<u>Conformance inspection, part 2</u>								
Amplification factor	1316	---		---	Mu	34.0	42.0	---
Power oscillation	1236	---	F = 8 MHz; Eb = 3,000 V dc; Ib = 150 mA dc	---	Po	270	---	W (useful)
Direct-interelectrode capacitance	1331	---		<div> } } }</div> ---	<div> { { {</div> Cgp Cin Cout	1.7 2.5 ---	2.3 3.4 0.45	pF pF pF
<u>Conformance inspection, part 3</u>								
Low-frequency vibration	1031	2/	No voltages applied	---	---	---	---	---
Bump	1036	2/	Angle = 10°	---	---	---	---	---
Life test	---	---	Group C; power oscillation; t = 500 hours	---	---	---	---	---
Life-test end points:	---	---						
Peak emission	1231	---		---	is	2.5	---	a
Primary grid emission	1266	---		---	Isg	---	-500	μA dc

1/ This test is to be the first test performed at the conclusion of the holding period.

2/ This test shall be performed during the initial production and once each succeeding 12-calendar months in which there is production. A regular double sampling plan shall be used, with the first sample of three tubes with an acceptance number of zero, and a second sample of three tubes with a combined acceptance number of zero. In the event of failure, the test will be made as a part of conformance inspection, part 2, code level D, with an acceptance level of 6.5. The regular "12-calendar month" double sampling plan shall be reinstated after three consecutive samples have been accepted.

3/ This specification uses accept on zero (c = 0) sampling plan in accordance with MIL-PRF-1, Table III.



Ltr	Dimensions			
	Inches		Millimeters	
	Min	Max	Min	Max
Conformance inspection, part 2				
A	7.250	7.750	184.15	196.85
B	---	3.188	---	80.98
D	5.000	5.500	127.00	139.70
E	.250	---	6.35	---
G	1.250	1.500	31.75	38.10
N	80°		100°	
Conformance inspection, part 3 (see note 1)				
C	6.625	7.125	168.28	180.98
F	.055	.061	1.40	1.55
J	.350	.365	8.89	9.27
P	Base: A4-10 (EIA)			
Reference dimensions				
H	.328		8.33	
KD	.500		12.70	
M	.563		14.30	

NOTES:

- These dimensions shall be checked annually with the following sampling plan:

$n_1 = 4$ $c_1 = 0$ where c_2 represents the total failures for the first
 $n_2 = 4$ $c_2 = 0$; and second samples combined.

In case of failure after double sampling, the failing dimension(s) shall become conformance inspection, part 2, for three successful consecutive submissions, at which time the test may revert to the conformance inspection, part 3 basis.

- Heat radiating connectors HR-2 (grid) and HR-6 (anode) or equivalent, are recommended for all applications.

FIGURE 1. Outline drawing of electron tube type 100TH.

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Custodians:

Army - CR
Navy - EC
Air Force - 11
DLA - CC

Preparing activity:

DLA - CC

(Project 5960-3558-07)

Review activities:

Army - AR
Navy - AS, CG, MC, OS, SH
Air Force - 99